Performance Analysis
of
Price Anderson Amendment Act (PAAA) Non-Compliance Tracking System (NTS) and Occurrence Reporting and Processing System (ORPS) Reportable Incidents
(April 1, 2006 – March 31, 2007)

Report No. 14

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ANALYSIS METHODOLOGY

As part of its oversight program required by DOE Order 226.1, *Implementation of Department of Energy Oversight Policy*, LBNL identifies operational events, accidents and injuries in order to analyze and trend incidents to determine areas of needed improvement and to ensure the effectiveness of corrective actions to mitigate events and identify recurring events.

The Occurrence Reporting Process System (ORPS) performance analysis is part of the quarterly analysis and trending requirement mandated by DOE Order 231.1A, *Environment, Safety and Health Reporting*.

Beginning with this reporting period, FY07 2nd Quarter, the methodology for data analysis of Price Anderson Amendment Act (PAAA) Non-Compliance Tracking System (NTS) and ORPS reportable incidents has been refined based on the requirements outlined in LBNL/PUB-5519 (3), Data Monitoring and Analysis Program Manual, which is part of the new institutional Issues Management Program. The Issues Management Program satisfies the data analysis requirements outlined in DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, and DOE O 231.1A, *Environment, Safety and Health Reporting*, to identify recurring events and prevent more serious events from occurring.

Statistical industry standards will be used to determine whether a process is stable, identify trends, adverse or otherwise, when analyzing ORPS and PAAA NTS reportable incidents. Based on an existing or potential trend, additional data will be monitored and analyzed to determine the cause of the trend, identify recurring events, and identify adverse conditions that require corrective actions, as applicable.

Data analysis reports will be in graphical format, typically runs charts, controls charts and/or pareto charts in accordance with LBNL/PUB-5519 (3) and will include the analysis of the data for the specified reporting period.

A process is considered stable as long as the datum points are contained within the Upper (UCL) and Lower Control Limits (LCL).

A statistical trend is defined as:

- One point outside the control limits;
- Two out of three points within two standard deviations above or below the baseline average;
- Four out of five points within one standard deviation above or below the baseline average;
- Seven points in a row above or below the baseline average; or
- Seven points in a row that are increasing or decreasing

Where incidents are required to be reported to more than one agency, they are counted as only one incident. For example, an incident that is PAAA and ORPS reportable is considered only one incident even though it was required to be reported to two agencies.

EXECUTIVE SUMMARY

This analysis report addresses PAAA NTS- and ORPS-reportable incidents that were identified during April 1, 2006 through March 31, 2007. During this reporting period, twenty-seven incidents were analyzed, eleven PAAA NTS-reportable incidents and fifteen ORPS reportable incidents. However, of these incidents five were found to be both PAAA NTS- and ORPS-reportable incidents. Therefore, these five incidents were considered only one incident resulting in the actual number of incidents totaling twenty-one.

Based on the analysis, it was determined that there is no evidence of statistical trends or recurring events that warrant additional management action or the submission of an ORPS Category 2R report.

1.0 ORPS REPORTABLE INCIDENTS

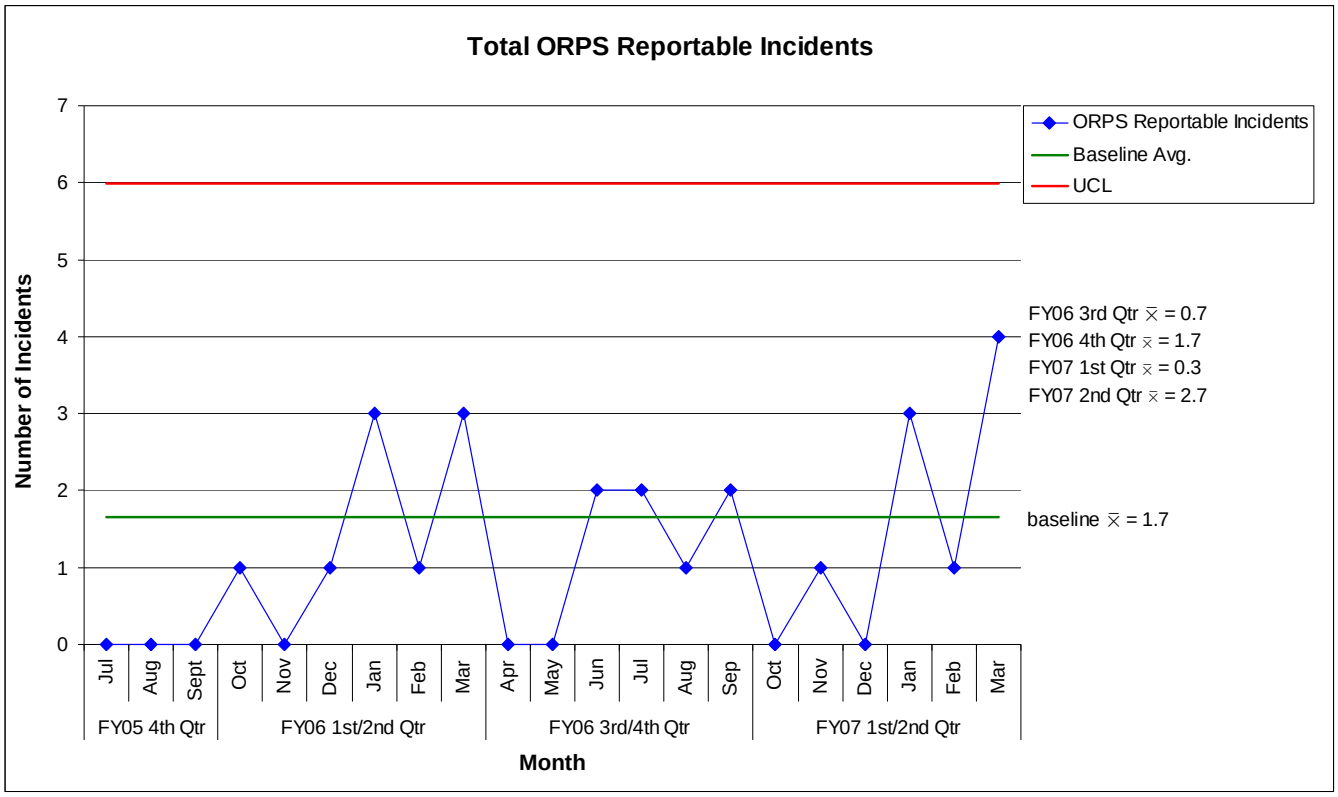

Figure 1.1

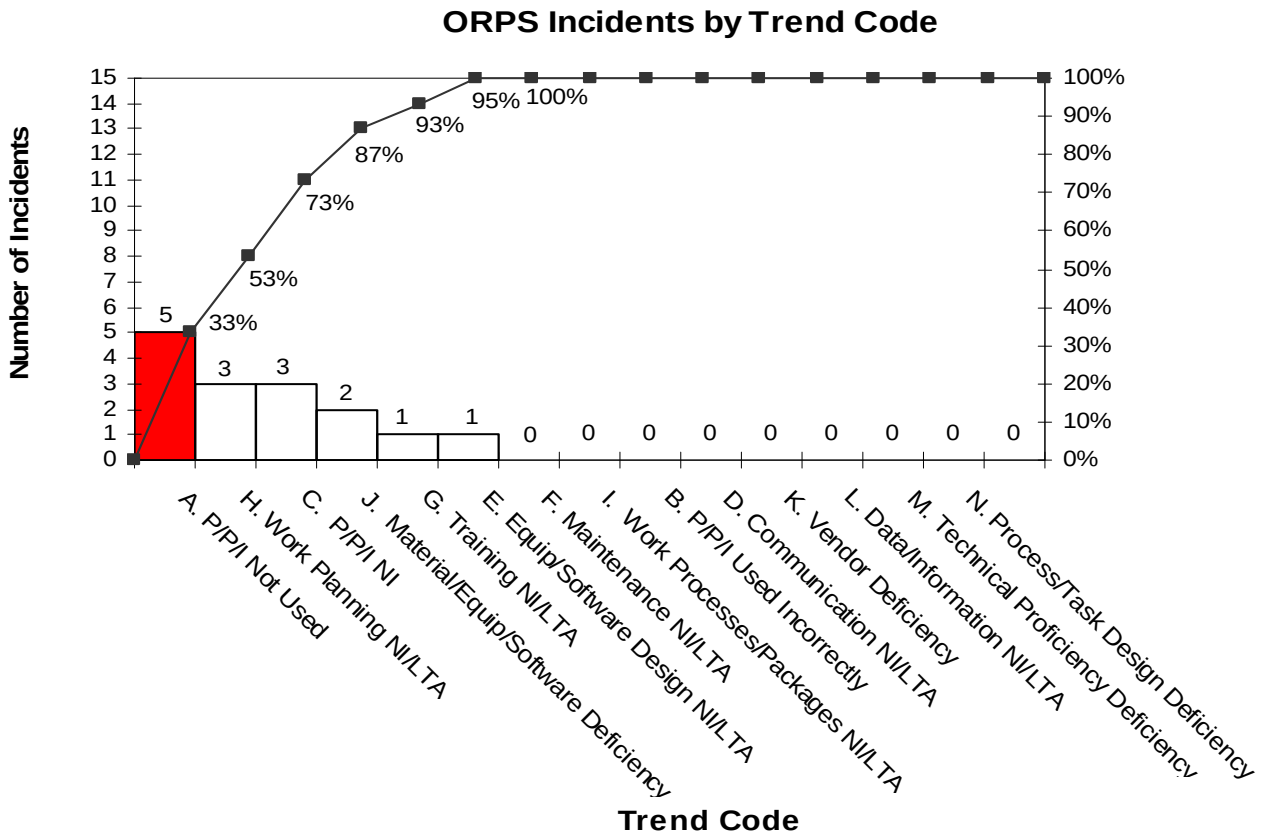

Figure 1.2

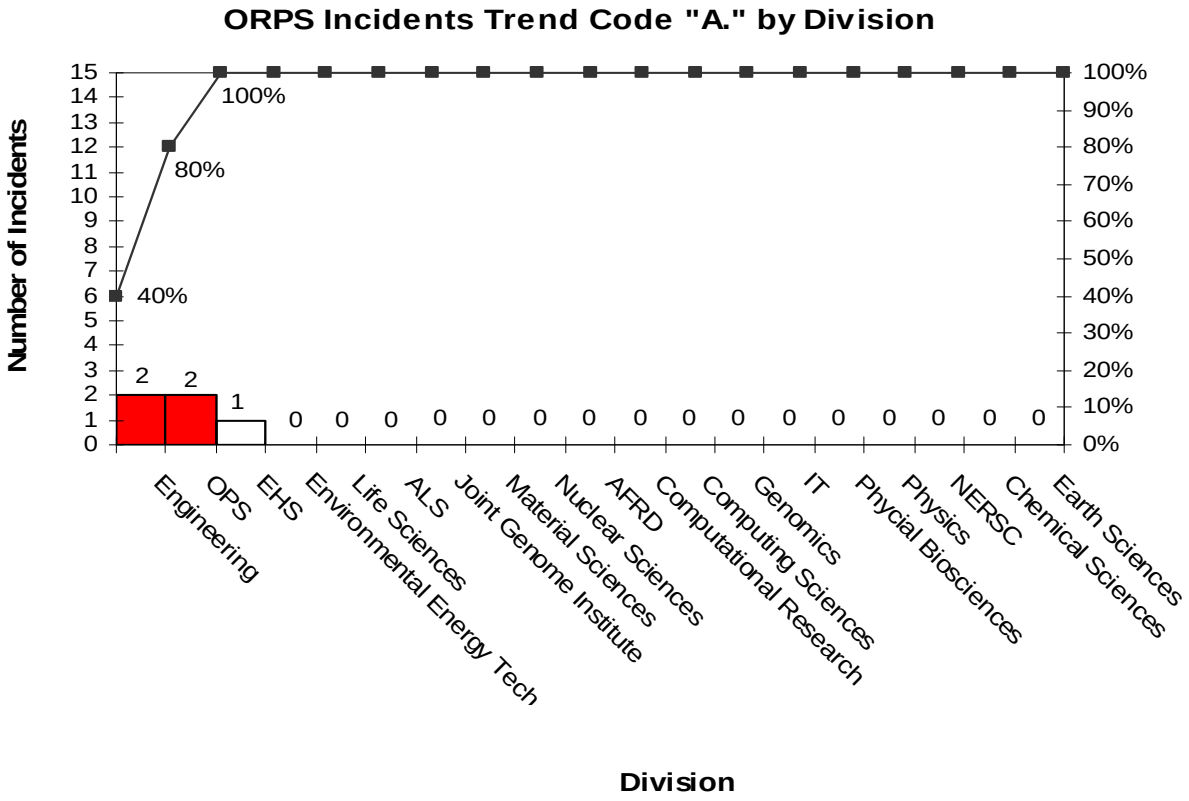

Figure 1.3

Analysis:

Comparison of the data from the FY07 1st Quarter reporting period to this reporting period, FY07 2nd Quarter, indicates the total number of instances over the twelve-month reporting periods increased this reporting period by one. Based on the data, LBNL's processes are stable and no statistical trend exists.

While no statistical trend is identified, the increasing number of ORPS incidents between January and March 2007 warranted further analysis to determine the existence of a recurring event. During the current reporting period, five electrical ORPS reports were generated: ORPS-SC-BSO-LBL-ENG-2006-0001 (June 2006), ORPS-SC-BSO-LBL-OPER-2006-0006 (July 2006), ORPS-SC-BSO-LBL-OPER-2006-0004 (September 2006), ORPS-SC-BSO-LBL-ENG-2007-0002 (February 2007) and ORPS-SC-BSO-LBL-OPER-2007-0002 (March 2007). Review of the ORPS report details and discussions with the Subject Matter Experts determined that these issues were distributed among different divisions and did not share common causes such as trend code, circumstance, division, etc. Based on this analysis, there is no evidence of recurring events. However, continued monitoring of electrical-related ORPS reports will be performed over the next few months to identify the development of recurring problems.

Figures 1.2 and 1.3 are pareto charts that represent the distribution of Total ORPS incidents over the past twelve months by Trend Code, and then further breakdown of the Trend Code “A. Policy/ Procedures/Instructions Not Used” that represent the Divisions who contributed to this trend code. The data is distributed among different divisions and subject matter indicating that there is no evidence of recurring issues.

2.0 PAAA NTS REPORTABLE INCIDENTS

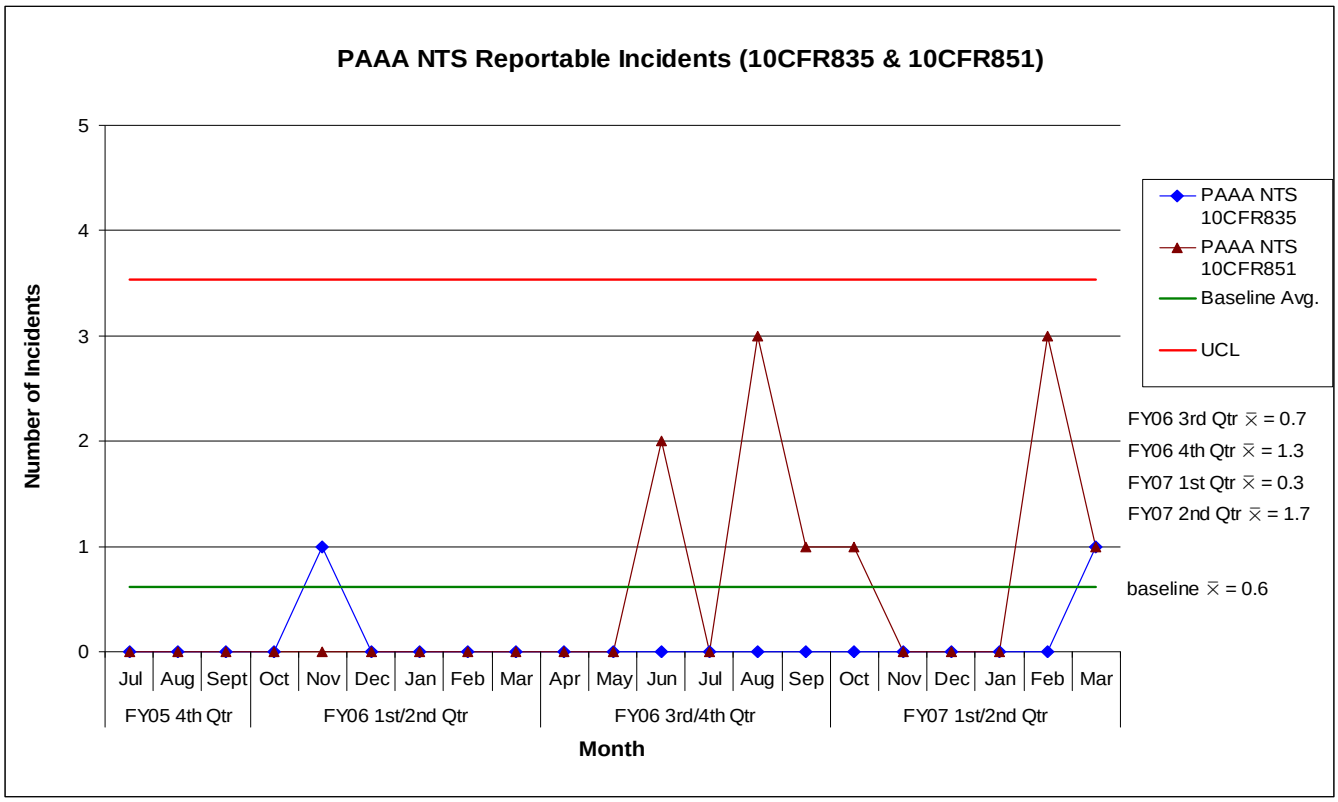

Figure 2.1

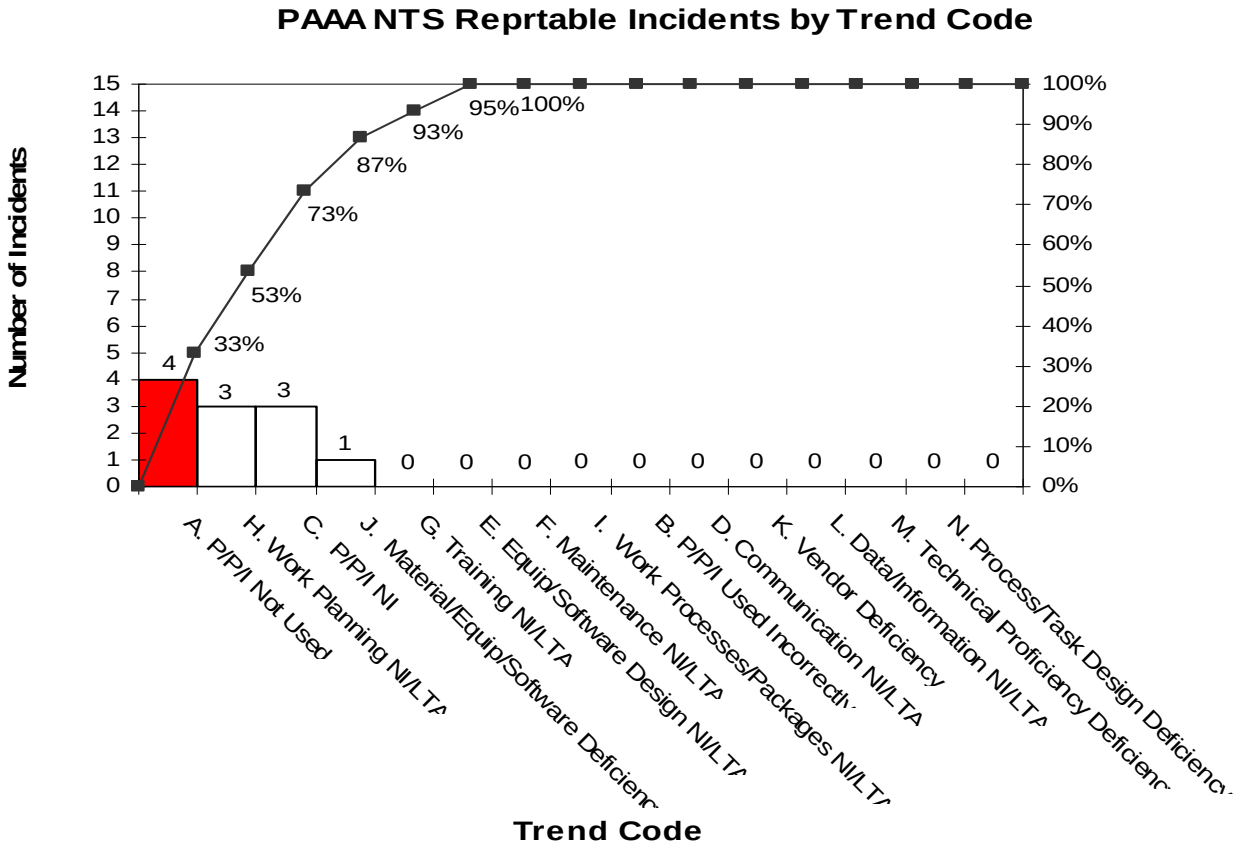

Figure 2.2

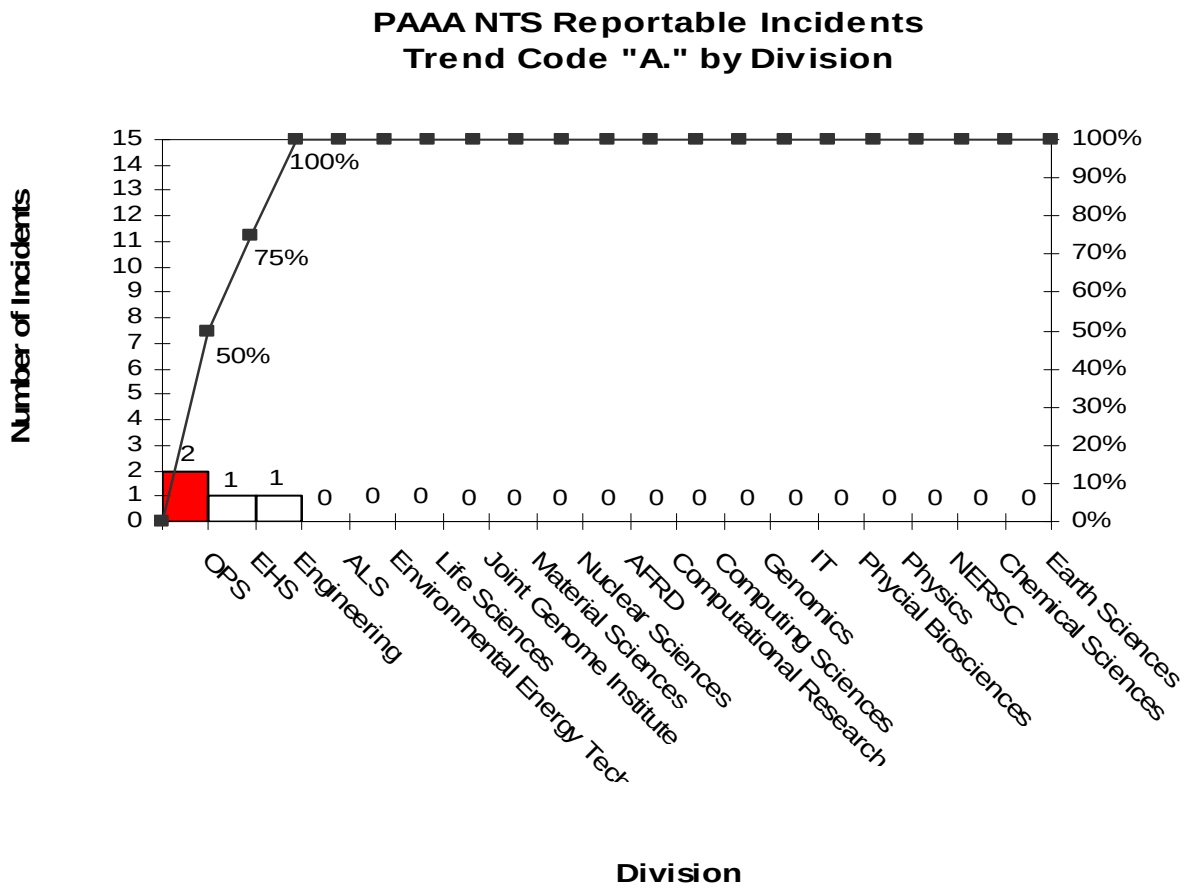

Figure 2.3

Analysis

Comparison of the data from the FY07 1st Quarter reporting period to this reporting period, FY07 2nd Quarter, indicates that no statistical change has occurred. The total number of instances over the twelve-month reporting periods increased this reporting period by 58%, which is attributed to the Lab's implementation of the 10CRFR851 Worker Safety and Health Program in June 2006. Additionally, while represented on Figure 2.1, five 10CFR851 PAAA NTS Reportable Incidents are duplicates of ORPS reportable Incidents. (See Attachment 1 for details on duplicate incidents.)

Based on the analysis, it has been determined that the process is stable, and no statistical trend for the FY07 2nd Quarter reporting period exists.

The increase from zero to three 10CFR851 PAAA NTS Reportable Incidents in February 2007 is attributed to the performance of a gap analysis between 10CFR 851 requirements and LBNL's program. During this analysis, it was determined that the Electrical Authority Having Jurisdiction (AHJ) and Job Hazard Analysis (JHA) programs did not fully meet the intent of 10CFR851. The 10CFR835 NTS Reportable Incident identified in March was specific to use of a whole-body dosimeter prior to being accepted by the DOELAP accreditation process.

Figures 1.2 and 1.3 are pareto charts that represent the distribution of Total PAAA NTS-reportable incidents over the past twelve months by Trend Code, and then further breakdown of the Trend Code “A. Policy/Procedures/Instructions Not Used” that represent the Divisions who contributed to this trend code. The data is distributed among different divisions and subject matter indicating that there is no evidence of recurring issues.

3.0 ORPS AND PAAA NTS REPORTABLE INCIDENTS

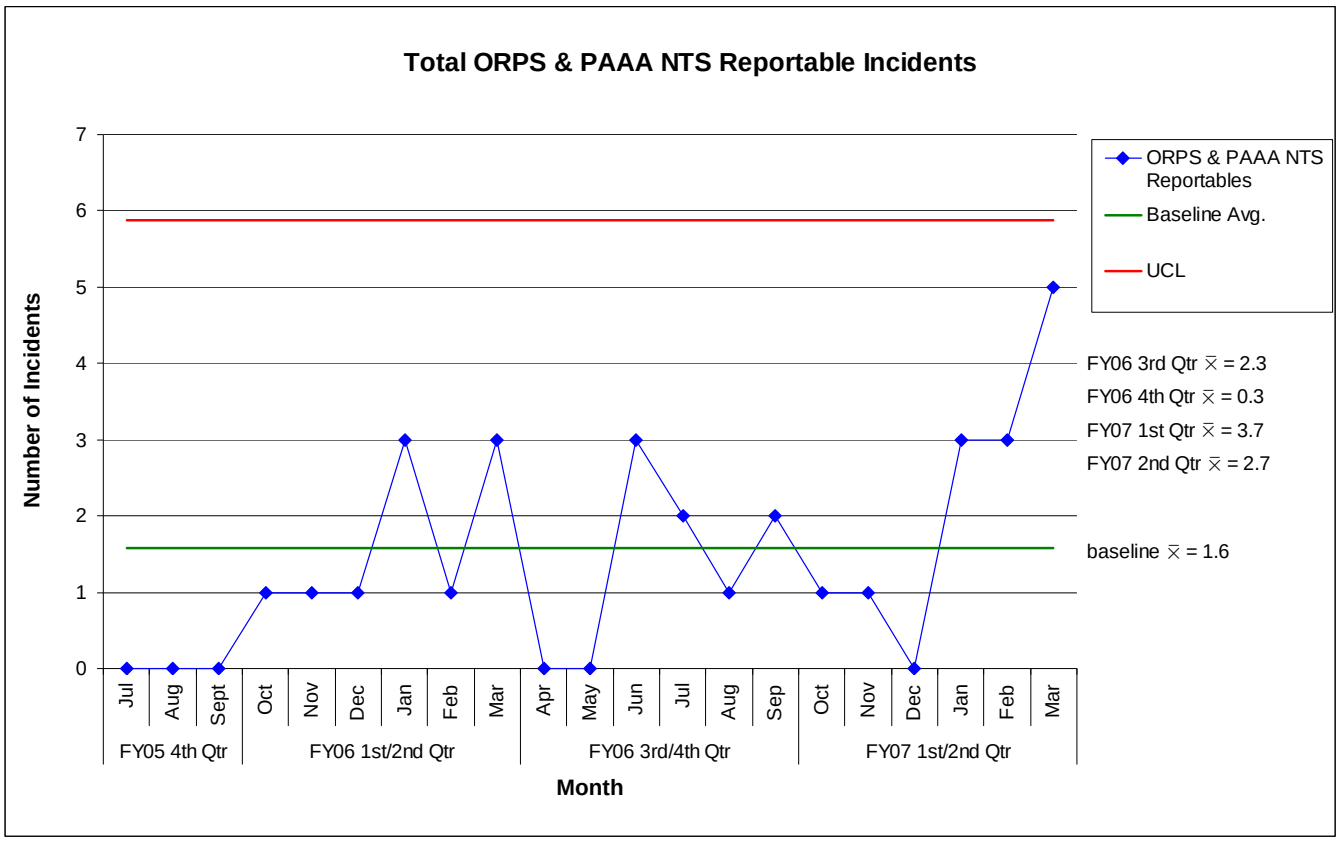

Figure 3.1

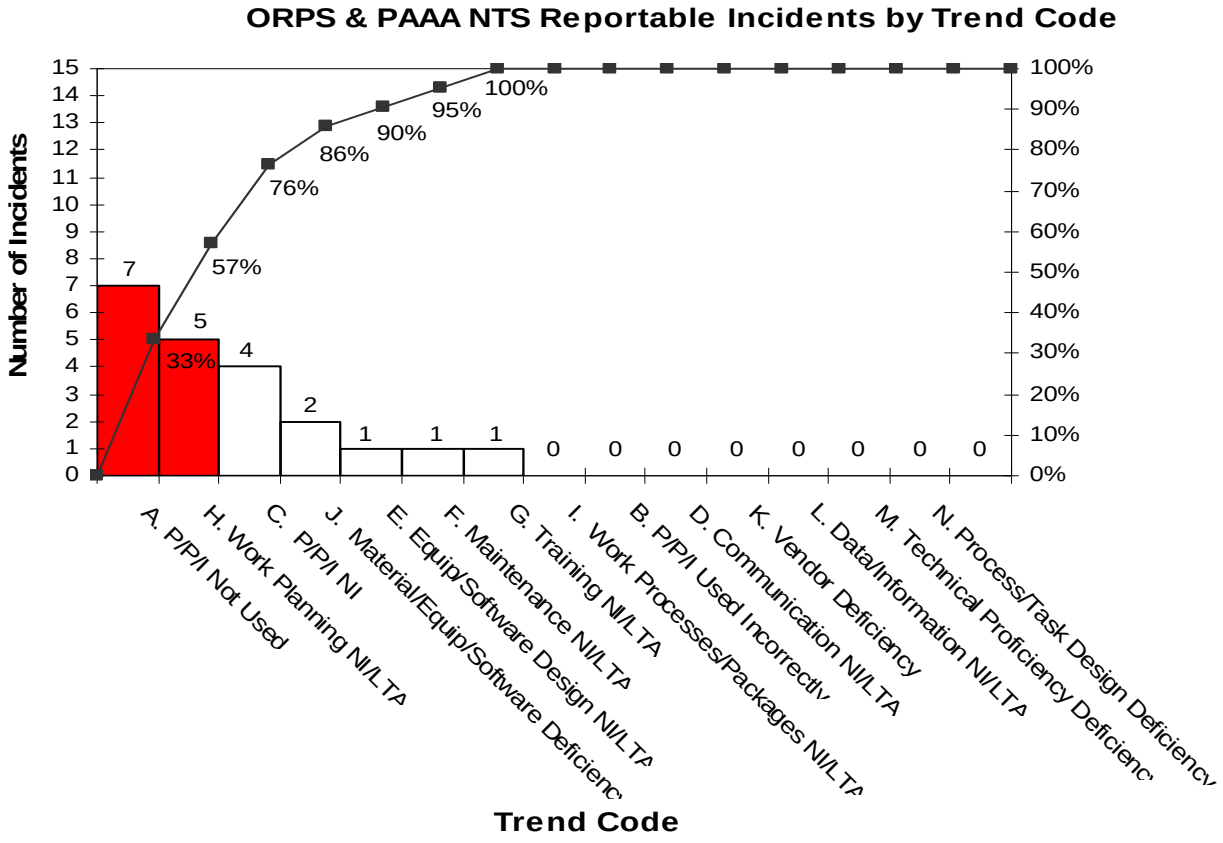

Figure 3.2

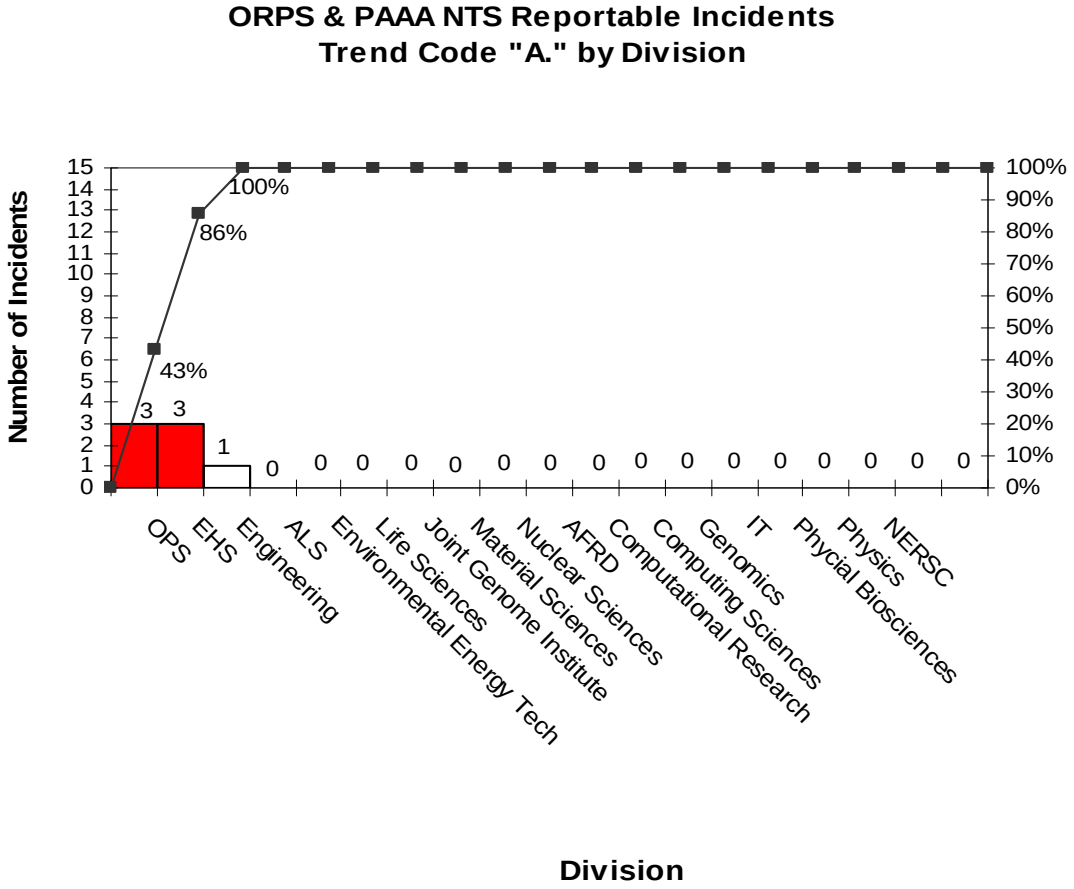

Figure 3.3

Analysis:

Where incidents are required to be reported to more than one agency, they are counted as only one incident. For example, an incident that is PAAA and ORPS reportable is considered only one incident even though it was required to be reported to two agencies. During this reporting period, five ORPS and PAAA NTS-reportable incidents were duplicated. (See Attachment 1 for details on duplicate incidents.)

Though the number of total incidents increased 20% from the FY07 1st Quarter reporting period to this reporting period, comparison of the data indicates that LBNL's processes are stable, and no statistical trend has been identified. However, based on the increasing number of incidents during January - March 2007, management should monitor the data to identify and analyze potential issues to ensure they do not become recurring problems.

Figures 1.2 and 1.3 are pareto charts that represent the distribution of Total PAAA NTS-reportable incidents over the past twelve months by Trend Code, and then further breakdown of the Trend Codes by Division. The majority of the incidents were categorized as trend codes "A. Policy/Procedures/ Instructions Not Used" and "H. Work Planning Needs Improvement/Less Than Adequate". In both instances the data is distributed among different divisions, subject matter and report type indicating that there is no evidence of recurring issues.

ATTACHMENT 1 – ORPS AND PAAA NTS REPORTABLE INCIDENTS FOR 4/1/07 – 3/30/07

Item	Title	Report #	FY	Disc. Date	PAAA Duplicates
1.	Heater tape electrical shorting	ORPS: ENG-06-01	FY06	6-Jun	
2.	Inadequate guard railing next to walking path	NTS: EHS-06-1	FY06	13-Jun	
3.	Management Concern from fall in B58A	ORPS: ENG-06-02	FY06	28-Jun	NTS: EHS-06-2
4.	Misidentified source of electrical power during precautionary investigation and core drilling	ORPS: OPER-06-06	FY06	24-Jul	
5.	Forklift Operator Trips on Forklift Tines, Suffers Broken Wrist	ORPS: OPER-06-01	FY06	24-Jul	
6.	Scaffold Fall Hazard	NTS: EHS-06-4	FY06	11-Aug	
7.	Employee breaks elbow at Building 66	ORPS: OPER-06-05	FY06	15-Sep	
8.	B55A LOTO violation	ORPS: OPER-06-04	FY06	5-Sep	NTS: EHS-06-6
9.	Fall Protection Program LTA	NTS: EHS-06-7	FY07	6-Oct	
10.	Management Concern due to Penetration Permit Incidents	ORPS: OPER-06-7	FY07	29-Nov	NTS: EHS-06-3
11.	Discovery of suspect/counterfeit pipe fittings and steel pipe	ORPS: OPER-07-1	FY07	18-Jan	
12.	B58A-102 ground penetration permit administrative error	ORPS: ENG-07-1	FY07	30-Jan	
13.	Potential Exposure to Nitric and Hydrofluoric Acid Vapor	ORPS: MSD-07-1	FY07	23-Jan	
14.	Electrical Equipment AHJ Approval Program (NEC 110.2) LTA	NTS: EHS-07-2	FY07	6-Feb	
15.	Job Hazard Analysis (JHA)Program Implementation LTA	NTS: EHS-07-1	FY07	23-Feb	
16.	Building 88 Vault 115volt electrical shock	ORPS: ENG-07-2	FY07	26-Feb	NTS: EHS-07-3
17.	Use of Non-DOELAP Dosimeter	NTS: EHS-07-4	FY07	7-Mar	
18.	LOTO violation results in near miss	ORPS: OPER-07-2	FY07	23-Mar	NTS: EHS-07-5
19.	Class II Violations of RCRA Part B Permit	ORPS: EHS-07-1	FY07	27-Mar	
20.	DTSC consent order/ fines	ORPS: EHS-07-2	FY07	29-Mar	
21.	Management Concern for Penetration Permit Violation	ORPS: OPER-07-3	FY07	30-Mar	

ATTACHMENT 2 – TREND CODES

Trend Code
A. Policies/Procedures/Instructions Not Used
B. Policies/Procedures/Instructions Used Incorrectly
C. Policies/Procedures/Instructions Needs Improvement
D. Communication Needs Improvement /Less Than Adequate
E. Equipment/Software Design Needs Improvement /Less Than Adequate
F. Maintenance Needs Improvement /Less Than Adequate
G. Training Needs Improvement /Less Than Adequate
H. Work Planning Needs Improvement /Less Than Adequate
I. Work Processes/Packages Needs Improvement /Less Than Adequate
J. Material/Equipment/Software Deficiency
K. Vendor Deficiency
L. Data/Information Needs Improvement /Less Than Adequate
M. Technical Proficiency Deficiency
N. Process/Task Design Deficiency